

REMARKS

I. General Remarks

With this Amendment, Applicants add new Claims 65-69. Therefore, Claims 1-69 are all the claims currently pending in the present application.

The Examiner has acknowledged Applicants' claim of foreign priority and the receipt of the certified copy of the priority document. The Examiner has also returned duly signed and initialed copies of the PTO-Forms 1449 filed with the February 1, 2001 and June 5, 2001 IDSs.

Claims. Claims 1, 3-5, 7-9, 11-13, 15-17, 19-21, 23-24, 32, 34-36, 38-40, 42-44, 46-48, 50-52, 54, 55, 63 and 64 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Kano et al, U.S. Patent No. 5,359,513 ("Kano"). Claims 2, 6, 10, 14, 18, 22, 25-31, 33, 37, 41, 45, 49, 53 and 56-62 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kano, as applied to claims 1, 3-5, 7-9, 11-13, 15-17, 19-21, 23-24, 32, 34-36, 38-40, 42-44, 46-48, 50-52, 54, 55, 63 and 64, in view of Lemelson, U.S. Patent No. 5,878,746 ("Lemelson").

Applicants respectfully traverse these rejections, as explained below.

II. Claim Rejections Under 35 U.S.C. § 102(b)

Regarding the Examiner's rejection of Claims 1, 3-5, 7-9, 11-13, 15-17, 19-21, 23-24, 32, 34-36, 38-40, 42-44, 46-48, 50-52, 54, 55, 63 and 64 over Kano, Applicants submit that Kano fails to disclose or suggest all of the limitations of present invention, as claimed, for at least the following reasons.

Claims 1 and 32. With respect to Claims 1 and 32, Applicants submit that Kano fails to disclose or suggest at least: "recording history data on past inter-image operations," as recited.

As noted by the Examiner, col. 12, lns. 44-59 of Kano discuss supplying digitized images to image memories 110 and 120. (Office Action, p.2). However, neither this section, nor any other portion of Kano discloses or suggests recording history data on past inter-image operations for at least two reasons.

First, Claims 1 and 32 each require two discrete aspects. The first element requires carrying out an inter-image operation to obtain processed image data therefrom. The second element requires recording history data on past inter-image operations. The Examiner relies on Fig. 11A and col. 12, lns. 44-59 of Kano to teach this limitation. However, Applicants submit that the cited portions of Kano only describe data up through a mapping of shift values. The map of values corresponds to shifts of Δx , Δy of a bit map. A bit map shift, without its accompanying underlying data, cannot provide a set of processed image data. Similarly, the discussion of a matching calculator only relates to statistical cross-relational value, which apart from the underlying data values, does not provide processed image data. Even taking into account the full disclosure pertaining to Fig. 11A, there is an ambiguity in the teachings of the reference that preclude an anticipation rejection.

Second, Kano fails to disclose or suggest “carrying out an inter-image operation between two or more sets of base image data each representing a distinct base image of an identical object,” as claimed. Kano fails to disclose or suggest carrying out an inter-image operation on multiple distinct base images.

With respect to the temporally sequential images discussed in Kano, the discussions of Kano are sufficiently ambiguous as to whether the obtaining of the processed image data from

inter-image operation processing and recording of history data for past inter-image operations that the specific requirements of the present invention, as recited in Claims 1 and 32 are not inherently present. Applicants also note that the Examiner may not properly rely on probabilities in the cited reference in order to teach claimed features, the anticipation rejection of Claims 1 and 32 is not properly supported.

Therefore, Applicants submit that Claims 1 and 32 are not anticipated by Kano and respectfully request that the rejection be reconsidered and withdrawn.

Claims 63 and 64. With respect to Claims 63 and 64, Applicants submit that, as discussed above, Kano fails to disclose or suggest “an inter-image operation between two or more sets of base image data each representing a distinct base image of an identical object.”

Further, with respect to Claim 64, Kano fails to disclose or suggest identifying the base images, as claimed. The cited portion of the Kano at col. 14 describes the display of a subtraction image with its original image. However, it is not clear what identifying information is output to the display.

Therefore, Applicants submit that Claims 63 and 64 are not anticipated by Kano and respectfully request that the rejection be reconsidered and withdrawn.

Claims 3-5, 7-9, 11-13, 15-17, 19-21, 23-24, 34-36, 38-40, 42-44, 46-48, 50-52, 54, and 55. With respect to Claims 3-5, 7-9, 11-13, 15-17, 19-21, 23-24, 34-36, 38-40, 42-44, 46-48, 50-52, 54, and 55, Applicants submit that these claims are patentable at least by virtue of their dependence on Claims 1 and 32, and for the following additional reasons.

With respect to Claims 3, 7, 11, 15, 19, 23, 34, 38, 42, 46, 50, and 54, Kano fails to disclose or suggest “wherein history data on the past inter-image operations are attached to the processed image data obtained through the inter-image operation.” Col. 4, lns. 57-68 of Kano, referred to by the Examiner, disclose “a pair of first and second images (step 10, 20), image registration and then subtraction,” as discussed by the Examiner. (Office Action, p.3). As disclosed at col. 5, lns. 7-12, “[i]mage registration includes the use of a local matching technique (step 43) which is applied to each pair of corresponding ROIs in the two images, and the mapping of shift values (step 44) representative of the amount of local matching between each corresponding pair of ROIs.” Thus, image registration is unrelated to history data attached to processed image data obtained through inter-image operation, as recited in Claims 3, 7, 11, 15, 19, 34, 38, 42, 46, 50, and 54. Further, this limitation is not disclosed or suggested in any other portion of Kano.

With respect to Claims 4, 8, 12, 16, 20, 24, 35, 39, 43, 47, 51, and 55, Kano fails to disclose or suggest “wherein the history data on the past inter-image operations are attached to each of said two or more sets of the base image data used for calculating the processed image data.” Col. 5, lns. 34-47 of Kano, referred to by the Examiner, disclose a shift mapping technique, as discussed by the Examiner. (Office Action, p.3). However, neither the section referred to by the Examiner nor any other section of Kano discloses or suggests history data attached to two or more sets of base image data, as recited in Claims 4, 8, 12, 16, 20, 24, 35, 39, 43, 47, 51, and 55.

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With respect to Claims 5 and 36, Kano fails to disclose or suggest “wherein the history data on the past inter-image operations include information identifying the base images each represented by one of said two or more sets of the base image data used for calculating the processed image data.” Col. 5, Ins. 1-22, referred to by the Examiner, disclose digitizing images, selecting ROIs, image registration, non-linear warping, subtraction, and viewing by a radiologist. (Office Action, p.3). However, neither this section, nor any other section of Kano discloses or suggests history data including information identifying base images.

With respect to Claims 9, 17, 40, and 48, Kano fails to disclose or suggest “wherein the history data on the past inter-image operations include such data indicating whether or not the processed image data on a certain processed image have already been obtained.” Col. 5, Ins. 24-33, referred to by the Examiner, disclose “matching between each corresponding pair of ROIs and comparing the result,” as discussed by the Examiner, and col. 8, Ins. 59-66, also referred to by the Examiner, disclose that “best match location are selected to perform a fine-search for local matching in the second step for accuracy,” as discussed by the Examiner. (Office Action, p.3). However, neither of these sections of Kano discloses or suggests anything relating to history data or history data including data indicating whether or not processed image data have already been obtained, as recited in Claims 9, 17, 40, and 48. Further, no other section of Kano discloses this limitation.

With respect to Claims 13, 21, 44, and 52, Kano fails to disclose or suggest:

wherein the history data on the past inter-image operations include information on recording sites of the processed image data obtained in the past, and wherein a desired set of the processed image data stored at the recording site thereof is fetched and

outputted instead of conducting the inter-image operation to recalculate the desired set of the processed image data, if it was found by referring to the history data that the desired set of processed image data had already been obtained.

The Examiner refers to col. 12, lns. 55-68 to disclose these limitations. (Office Action, p. 4). Col. 12, lns. 55-68 disclose the result of matching calculations being stored in a memory 170 and the result of curve-fitting calculations being stored in memories 190 and 200. However, this section of Kano fails to disclose or suggest history data, as discussed above, with respect to Claims 1 and 32, or fetching and outputting stored processed image data if it is found, referring to history data, that the desired processed image data has already been obtained, as recited in Claims 13, 21, 44, and 52. Further, no other section of Kano discloses or suggests these limitations.

Therefore, for at least the above-described reasons, Applicants submit that Claims 3-5, 7-9, 11-13, 15-17, 19-21, 23-24, 34-36, 38-40, 42-44, 46-48, 50-52, 54, and 55 are not anticipated by Kano and respectfully request that the rejection be reconsidered and withdrawn.

III. Claim Rejections under 35 U.S.C. § 103(a)

Regarding the Examiner's §103(a) rejection of Claims 2, 6, 10, 14, 18, 22, 25-31, 33, 37, 41, 45, 49, 53 and 56-62 over Kano and Lemelson, Applicants submit that though Lemelson is not relied on to teach the limitations of Claims 1, 3-5, 7-9, 11-13, 15-17, 19-21, 23-24, 32, 34-36, 38-40, 42-44, 46-48, 50-52, 54, and 55, Lemelson, like Kano, fails to teach or suggest the limitations of these claims. Therefore, Applicants submit that Claims 2, 6, 10, 14, 18, 22, 25-31, 33, 37, 41, 45, 49, 53 and 56-62 are patentable at least by virtue of their dependence on Claims 1,

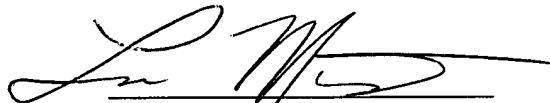
3-5, 7-9, 11-13, 15-17, 19-21, 23-24, 32, 34-36, 38-40, 42-44, 46-48, 50-52, 54, and 55 and respectfully request that the §103(a) rejection be reconsidered and withdrawn.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Laura Moskowitz
Registration No. 55,470

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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